

AMENDMENTS TO THE DRAWINGS

Please substitute the replacement drawings for the drawings submitted when the application was filed. The replacement drawings are a clearer set of the drawings filed with this application, which now include a replacement sheet for Figure 1 that now shows the barrel including rifling. It is believed that no matter has been added.

REMARKS

Reconsideration of this application is respectfully requested. To this end, petition for a one-month extension of time is hereby made to respond to the outstanding Office Action dated May 18, 2009.

Claims 1, 5, 8, 13 – 18 and 24 – 28 are pending in the application. Upon entry of this Amendment, claims 1, 5, 13, 14, 24 and 25 will be amended.

In addition, the application specification will be amended to clarify that the projectile engraves on rifling in the barrel under its own momentum, and Figure 1 of the application drawings will be amended to specifically show the rifling in the barrel. For the reasons discussed below, it is believed that these amendments to the application specification and drawings do not constitute the addition of new matter.

The Examiner is thanked for indicating, in the outstanding Office Action, that objected to claims 5, 14-17, and 25-28 would be allowable. It is assumed that the allowability of these claims is based upon them being rewritten to include the limitations of their base claim and any intervening claims, which has now been done in this application. In this regard, to the extent that the base claim is claim 1, the rewritten claims reflect the change in the language regarding the engraving made to claim 1.

In the outstanding Office Action, the Examiner objected to the drawings in the application, indicating that the drawings do not show the “engraving in the barrel” recited in claim 1 and the “retaining means” recited in claims 13 and 24.

The Examiner has also rejected claims 1, 13 and 24 under 35 U.S.C. §112, first paragraph, as failing to comply with the “written description” requirement of the U.S.

Patent Statute with regard to the “engraving” and “retaining means” limitations recited in these claims.

With regard to the “retaining means” recited in claims 13 and 24, given that this phrase has been deleted from claims 13 and 24, it is believed that the Examiner’s objection to the drawings and rejection of claims 13 and 24 under §112 on this basis should be withdrawn.

With regard to the “engraving” recited in claim 1, attached as Attachment “A” is an excerpt from Wikipedia (<http://en.wikipedia.org/wiki/Rifling>), which explains “rifling” in the barrel of a gun, and, thereby, the process of “engraving” a projectile engaging the rifling. Thus, the excerpt explains “engraving” as follows:

When the projectile is swaged into the rifling, it takes on a mirror image of the rifling, as the lands push into the projectile in a process called engraving. Engraving takes on not only the major features of the bore, such as the lands and grooves, but also minor features, like scratches and tool marks. The relationship between the bore characteristics and the engraving on the projectile are often used in forensic ballistics.

* * *

The bullet then travels down the throat and engages the rifling, where it is engraved, and begins to spin. Engraving the projectile requires a significant amount of force, and in some firearms there is a significant amount of freebore, which helps keep chamber pressures low by allowing the propellant gases to expand before being required to engrave the projectile.

* * *

Rifling refers to the actual grooves running down the length of the barrel, which causes the projectile to spin. Engraving is the process wherein the outside of the projectile is engraved (channels are formed in the bullet) while moving down the barrel.

Thus, it is respectfully submitted that a person of ordinary skill in the relevant art would know that “engraving” means channels being formed on a projectile as the projectile is moved down the barrel due to the presence of rifling in the barrel. In view of this explanation, it is now clear to the undersigned that the discussion relating to “pre-existing engraving” included in the Amendment After Final Rejection filed on March 5, 2009 should have more appropriately only referred to “rifling”.

In view of the foregoing, independent claim 1 has been amended to clarify that a drive means drives an urging member between a projectile receiving position and a projectile delivery position inside a chamber of the gun that is proximate to the end of the barrel, so that the projectile is delivered into the proximate end of the barrel where the urging member stops and the projectile is released by the urging member so that the projectile engraves on rifling in the barrel under it's own momentum.

Although the specification of the present application does not specifically refer to “rifling” in the barrel of the gun in connection with its discussion of “engraving”, it is believed that one of ordinary skill in the relevant art would recognize that a gun barrel has the inherent property of “rifling”, as evidenced by the discussion in the Wikipedia excerpt submitted with this Amendment and the discussion of “engraving” included in the application specification. As such, the inclusion of “rifling” in claim 1 and in the application specification is not believed to be an introduction of new matter in the application. See, MPEP §2163.07(a) “Inherent Function, Theory, or Advantage”. Submitted with this Amendment is a clear set of the drawings filed with this application,

which now include an amended Figure 1, which now shows the barrel including the rifling 15.

The Examiner is also repeating in the outstanding Office Action his earlier rejection of claims 1, 8 and 18 under 35 U.S.C. §102(b) as being anticipated by Meigs *et al.* (USP 889,321). It is not clear why the Examiner is repeating this rejection at this time, given that he has previously indicated these claims to be allowable over Meigs. Nevertheless, the Examiner's rejection is respectfully traversed for the same reasons presented in the Amendment After Final Rejection, previously filed in this application on March 5, 2009.

For an invention to be anticipated by a reference, every element of the claim must be disclosed in the reference. Here, independent claim 1 has been amended to clarify the claimed ammunition loading assembly by reciting that the drive means drives the urging member between a projectile receiving position outside the barrel and a projectile delivery position inside the chamber of the gun that is proximate to the end of the barrel, where the urging member stops and the projectile is released by the urging member so that the projectile engraves on rifling in the barrel under its own momentum.

Meigs does not anticipate amended claim 1 since Meigs does not disclose an urging member for urging a projectile into a barrel of a gun and releasing the projectile proximate to the end of the barrel, where the urging member stops and the projectile is released by the urging member so that the projectile engraves on rifling in the barrel under its own momentum, as recited in amended claim 1.

Rather, Meigs is directed to providing a chain rammer for a gun that can occupy minimum space and therefore be desirable for use in turrets and other "contracted places" and that is of simplified construction so as to lessen its cost while also maintaining required strength and rigidity. In this regard, Meigs discloses a rammer that includes a rammer head, a main chain X and a guide chain Y which travels with the main chain and is lighter than the main chain and which prevents the main chain from flexing, to thereby sustain the rammer in a horizontal position. See, e.g., Meigs, col. 1, lns. 14-22 and col. 2, lns. 73-77.

The ammunition loading assembly of the present invention is a combination of a conventional flick rammer and the chain rammers of the prior art inventions. The ammunition loading assembly has the advantages of both the flick rammer and the chain rammer, but overcomes the disadvantages of both.

A conventional flick rammer for loading a projectile into a barrel of a gun flicks the projectile, from a position outside the chamber, through the inside of the chamber into the bore of the barrel. A first disadvantage of such flick rammer is that, to enable engraving of the projectile in the barrel, concentric alignment of the projectile and the barrel is required, which is not always accurately achieved owing to the distance the projectile is flicked. This is aggravated at high elevations of the barrel.

A second disadvantage of the flick rammer is that if the energy with which the projectile is flicked into the barrel is insufficient, fall-back of the projectile occurs. This is especially so if the elevation of the barrel is greater than 45 degrees and where the concentric alignment of the projectile and barrel moves out of kilter during movement of

the projectile along the chamber, resulting in the sides of the projectile bouncing against the insides of the chamber, thus reducing the kinetic energy thereof.

Furthermore, should the energy with which the projectile is flicked into the barrel be too much, bounce-back of the projectile occurs. Moreover, with a conventional flick rammer, the energy applied to the projectile is relatively difficult to control and the engraving depth of projectile is therefore inconsistent.

In the case of conventional chain rammers, such as that disclosed in Meigs, a chain is used to push the projectile into and through the inside of the chamber and into the bore of the barrel, until the projectile comes to a halt within the bore, typically owing to the rifling inside the bore. Thereafter, the chain retracts, while the projectile remains in position in the bore. A disadvantage of conventional chain rammers is that, since the projectile is forced into the bore so as to engage the rifling, a tremendous force can be exerted on the entire system. Repeatedly loading projectiles in this manner can, therefore, be detrimental to the gun and the ammunition loading assembly.

An important feature of the present invention is that the projectile is delivered and released just prior to the proximate end of the barrel where the rifling starts and where the urging member stops and the projectile is released by the urging member so that the projectile engraves in the barrel under its own momentum.. This renders the assembly relatively more reliable than conventional rammers, since engraving of the projectile is more accurate and predictable at all elevations. In the present invention, the projectile is guided by the urging member into the chamber at a constant speed to a position just short of the commencement of rifling at the proximate end of the barrel.

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The projectile, therefore, engraves on the rifling under its own momentum. This engraving is more accurate than in the case of existing systems, since the projectile is guided and controlled all the way except for a very short distance just prior to engraving, where it is released to travel on its own momentum into the bore of the barrel where it engraves. The risk of misalignment and bounce-back is therefore reduced considerably, while still ensuring engraving.

In view of the foregoing, it is clear that Meigs does not anticipate amended independent claim 1 of the present application or dependent claims 8 and 18, which depend from claim 1.

In view of the foregoing, it is believed that all of the claims remaining in the application, *i.e.*, claims 1, 5, 8, 13 – 18 and 24 – 28, are now in condition for allowance, which action is earnestly solicited. If any issues remain in this application, the Examiner is urged to contact the undersigned at the telephone number listed below.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: Robert A. Molan
Robert A. Molan
Reg. No. 29,834

RAM:drt
901 North Glebe Road, 11th Floor
Arlington, VA 22203
Telephone: (703) 816-4000
Facsimile: (703) 816-4100